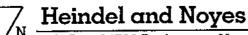


Engineers

• Environmental Scientists



H

P.O. Box 64709 Burlington, Vermont 05406-4709

802-658-0820 Fax 802-860-1014

September 11, 1997

Mr. Chuck Schwer
Hazardous Materials Management Division
Agency of Natural Resources
103 S. Main St.
Waterbury, VT 05676

Re: Riverton General Store, site # 91-1149

Dear Chuck:

Enclosed please find the site investigation report for the above referenced site. Heindel and Noyes has completed the investigative work requested in 1991 by the HMMD. We have determined that no contamination exists at the site and that it is eligible for a SMAC designation. This report provides the formal request to SMAC the site.

Please feel free to call Jeff Noyes or myself should you have any questions.

Best regards,

Ameddia Perry Staff Scientist

AP/ap Enclosure

cc: Rob Wheeler, Merchants Bank

[U:MPERRY\WPDOC\$\\$CHWER.L1]



Heindel and Noyes
PO. Box 64709 Burlington, Vermont 05406-4709

Consulting Hydrogeologists

• Engineers

• Environmental Scientists

802-658-0820 Fax 802-860-1014

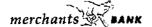
RIVERTON GENERAL STORE Berlin, Vermont

SITE INVESTIGATION REPORT

Prepared by:

Heindel and Noyes

Prepared for:



RIVERTON GENERAL STORE Site # 91-1149 Berlin, Vermont

SITE INVESTIGATION REPORT

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Consulting Hydrogeologists

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802-658-0820 Fax 802-860-1014

RIVERTON GENERAL STORE Site #91-1149 Berlin, Vermont

SITE INVESTIGATION REPORT

EXECUTIVE SUMMARY

- During a tank pull on October 21, 1991, 50 yd³ of contaminated soil and a slight sheen on groundwater were noted at the Riverton General Store.
- All soil was replaced in the excavation hole and replacement tanks were installed.
- Identified sensitive receptors are nearby private drinking water wells and the Dog River, a class A stream.
- During August of 1997, Heindel and Noyes conducted a site investigation involving soil borings, well installation, and groundwater sampling.
- The investigation revealed no contamination in soil or groundwater.
- No BTEX or VOC contamination was detected in the downgradient private drinking water wells.
- This site is eligible for a SMAC designation.



Heindel and Noyes

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Consulting Hydrogeologists

· Engineers

• Environmental Scientists

802-658-0820 Fax 802-860-1014

RIVERTON GENERAL STORE Site #91-1149 Berlin, Vermont

SITE INVESTIGATION REPORT

1. INTRODUCTION

The Riverton General Store is an active hazardous waste site (#91-1149) in Berlin, Vermont at 44° 11' 57.7" north latitude by 72° 37' 56.1" west longitude. A site location map is included in the attachment on page 1. The site is a small general store with a retail gasoline service. The current owners of the store are Jeff and Karen Bushey, RD#2, Box 2270-19, Riverton VT 05668, phone (802) 485-8877.

Two 1,000 gallon gasoline Underground Storage Tanks (UST's) were removed from the Riverton General Store on October 21, 1991 to be replaced with new tanks. The tank pull was supervised by Griffin International, and Ted Unkles of the HMMD. Based on PID readings which ranged from 0.2 to 140 ppm, but tended to average between 0.2 to 5 ppm, Griffin estimated that approximately 50 cubic yards of soil were contaminated. A slight sheen was noted on some of the water in the excavation. All removed soils were replaced in the excavation.

The Management and Prevention Section of the Hazardous Materials Management Division (HMMD) of the State of Vermont, Department of Environmental Conservation, referred the site to the Site Management Section. A VSPS sensitive receptor and site prioritization evaluation was conducted, which identified the Dog River and nearby private drinking water wells as potentially impacted receptors. The site was designated medium priority. The Sites Management Section requested on November 5, 1991, an initial site investigation involving monitor well installation and sampling of in-use homeowner wells.

During August of 1997, Heindel and Noyes conducted the requested site investigation. Four soil borings were conducted in the surficial soils which were screened for VOC's,

monitoring wells were installed in each boring, and the three bedrock drinking water wells which exist downgradient of the site were sampled.

2.0 SITE DESCRIPTION

The Riverton General Store is located off of Vermont State Rt. 12 in the town of Berlin, near the Dog River. The Dog is a class A stream about 200 feet to the Northwest of the store. Soils in the area are shallow sands overlaying the bedrock, which is believed to be slate. The 1960 Centennial Bedrock of Vermont (Charles Doll, State Geologist) identifies the regional bedrock as the Cram Hill member of the Missisquoi formation, which is a pale green-grey phyllite that grades locally to slate. Bedrock at the site is suspected to consist of slate based on the Barberi well log (see page 5 of the attachment) and the claims that the water has a strong sulfur content. Shale and slate tend to release high levels of this element into water. Many local wells are unpotable due to their sulfur content; a sulfur odor was noticeable during sampling.

The site is situated on a terrace about 60 feet above the river which is steeply incised within its banks. The regional ground surface consistently slopes Northwest, towards the river.

A reevaluation of sensitive receptors identified three private water supply wells which are downgradient of the site: Ricker, Barberi, and Gardner. The Ricker and Barberi wells are not used for drinking due to their high sulfur content. Mr. Barberi claimed to have seen an oily sheen on his water when it is placed in a bucket. The Dog River is also identified as a potential receptor. Refer to the site map on page 3 of the attachment.

3.0 SOIL BORINGS AND WELL INSTALLATION

Four soil borings were advanced on August 4, 1997. Three were drilled in areas suspected to be downgradient of the UST site; a fourth upgradient boring was also made. Soil logs from the borings are presented in the attachment on page 2, and reflect that gravelly fill was placed on top of the native fine sand. The surficial soils are thin, with bedrock encountered at 6 to 8.5 feet in the borings. The water table was encountered at approximately 5 feet.

A Photoionization detector (PID) with a 10.6 eV lamp was employed to screen soils for Volatile Organic Compounds (VOC's). Auger tailings were screened as they emerged, and split spoons samples were first screened in the spoon, and then again after equilibrating inside of a sealed plastic bag. PID results are included on page 2 of the attachment. Note that due to the sunny hot weather, moisture condensed inside of the bags from MW-1 and MW-2, which caused the falsely elevated PID readings. Beginning with the deeper MW-2 sample, bags were allowed to equilibrate in the shade, and no longer produced the elevated readings. No fuel odor was noted at any time in any boring. Field screening data indicates no evidence of soil contamination.

A monitor well was installed in each boring. All wells extended to the bedrock and were screened for a five foot interval from the rock up. Wells were constructed of 2" PVC with factory-slotted screen and filter sock. Native soil from the drill holes was used as backfill. Tops of the wells were placed below grade in curb boxes. The site was surveyed in order to establish elevations and groundwater flow direction. The wells were developed by bailing until dry, allowing them to recharge, and bailing to dry again.

4.0 GROUNDWATER SAMPLING

The 4 monitor wells were sampled on August 11, 1997, a week after they had been installed and developed. The wells were again purged prior to sampling for gasoline constituents by EPA method 602, as requested by the HMMD. The three identified homeowner wells were also sampled. The sampling log is presented on page 4 of the attachment; laboratory results are found on pages 6-8.

A contour map created from the August 11, 1997 water elevations confirms that groundwater flow is to the North-Northwest, in the direction of the Dog River and the Ricker well. The Gardner and Barberi wells are laterally downgradient. See page 3 of the attachment.

No BTEX, MTBE, other petroleum compounds, nor unidentified peaks were detected in the three downgradient monitor wells. No BTEX, MTBE, or other petroleum compounds were found in the upgradient well MW-4, although 3 unidentified peaks were detected.

In the private drinking water supply wells, no BTEX, MTBE, other petroleum compounds, nor unidentified peaks were found. These wells were purged by running the faucets or hoses for 5-10 minutes. No odor of petroleum or sheen was observed in the water from

any supply well. Mr. Barberi's claim of a sheen on his water is unsubstantiated but may be related to <u>natural oily residue</u> associated with non-pathogenic microbial activity.

The test data indicate natural processes of degradation and dilution have remediated the minor initial amount of contamination. The thin layer of sand which overlays bedrock most likely facilitated rapid dispersion of the pollution without retention or bedrock contamination. No threat to the Dog River is suspected because the groundwater discharging to it is free of contaminants.

5. SMAC REQUEST

All of the criteria for the SMAC designation, as specified in the agency's Site Management Activity Completed Classification Procedure are met as follows:

1. The source, nature, and extent of the contamination will have been adequately defined.

The source and nature of the contamination are defined as gasoline leaking from an underground storage tank which was removed in 1991. The present extent of the contamination is nonexistent; the original extent was approximately 50 yd³ as estimated by Griffin in 1991.

2. The site has been evaluated to verify that the source(s) of contamination has (have) been adequately removed, remediated, or adequately contained. All remedial action objectives have been achieved, and any remedial actions or activities have been discontinued.

The source of the contamination, a UST, was removed in 1991. Sampling of wells which penetrated the full extent of the water table revealed no detectable levels of BTEX, MTBE, or other EPA method 602 contaminants. Samples from all three bedrock wells which exist downgradient also revealed no evidence of petroleum contamination. Natural degradation and attenuation has been very effective at remediating the site.

 Levels of contaminants in soil and groundwater shall be stable, falling, or non-detectable... No quantitative contaminants were detected in soil or groundwater.

4. Groundwater enforcement standards shall be met on the entire property and at compliance points established by the HMMD... Soil contaminant guidelines shall also be met.

No compliance point was designated. However, the property boundary is assumed as the default compliance point. Groundwater standards are met on the entire property and beyond the compliance point.

5. No unacceptable threat to human health or the environment exists at the site from exposure to hazardous materials.

No detectable hazardous materials are known on site. Drinking water wells downgradient of the site are devoid of petroleum contaminants.

6. Site meets RCRA requirements

Not applicable.

7. Site meets CERCLA requirements

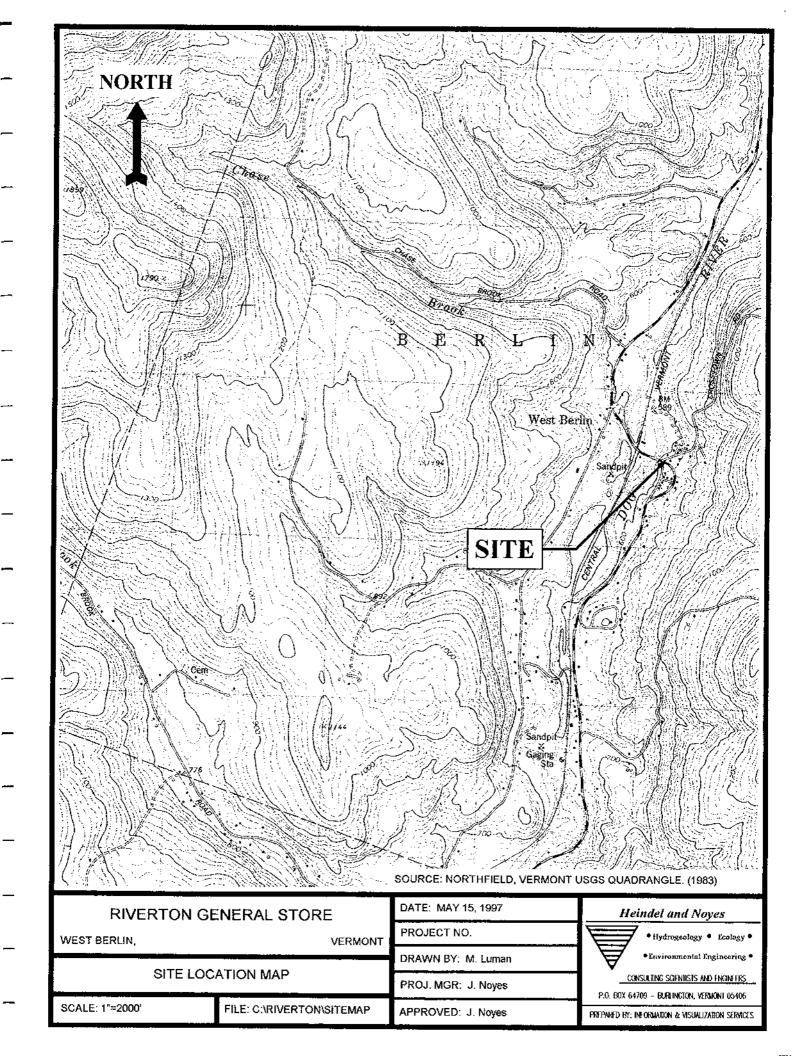
Not applicable.

6. CONCLUSIONS

A minor release of petroleum to the subsurface environment occurred prior to October of 1991, when low levels of contaminated soil and a slight sheen on groundwater were detected during a tank pull. This contamination has dispersed and attenuated due to the permeable nature of the sandy soils. No contamination was detected on site during 1997 in four soil borings and monitor wells, nor in three homeowner wells which are downgradient of the site.

On behalf of the Bushey's, Heindel and Noyes petitions the HMMD to consider the site eligible for the Site Management Activities Complete (SMAC) designation.

[U:WPERRY/WPDOCS/RIVERTON.R1]



Riverton General Store

)rilling Logs

--Date: 8/4/1997

MW-1

| Depth | Blows per 6" | Rec. | Soil Description | | Bag PID | Notes |
|-------|--------------|------|---|---|---------|-----------------|
| , — | | | | | | |
| 0-2 | | | Cobbly, Gravelly, Brown Fine Sand Fill | 0 | | |
| 2-4 | 8/9/9/10 | 12" | Cobbly, Gravelly, Brown Fine Sand Fill | 0 | 11 | Moisture in Bag |
| 4-5 | | | Cobbly, Gravelly, Brown Fine Sand Fill | 0 | _ | |
| 5-7 | 3/3/9/REF | 14" | Olive-Brown Very Fine Sand w/ Iron Stains. Saturated. | 0 | 24 | Moisture in Bag |

⁻Bedrock at 6.5 ft. bgs. Well installed to rock.

_MW-2

| L | Depth | Blows per 6" | Rec. | Soil Description | PID | Bag PID | Notes |
|---|-------|--------------|------|--|-----|---------|-----------------|
| Γ | | | | 11.01 | | | |
| _ | 0-2 | | | Cobbly, Gravelly, Brown Fine Sand Fill | 0 | | |
| | 2-4 | 6/4/7/11 | 12" | Cobbly, Gravelly, Brown Fine to Coarse Sand Fill | 0 | 20 | Moisture in Bag |
| Γ | 4-5 | | | Cobbly, Gravelly, Brown Fine to Coarse Sand Fill | 0 | | |
| Ţ | 5-6 | 4/6/REF | 12" | Dark Olive-Brown Very Fine Sand w/ Iron Stains. Saturated. | 0 | 0 | |

³edrock at 6 ft. bgs. Well installed to rock.

¯WV-3

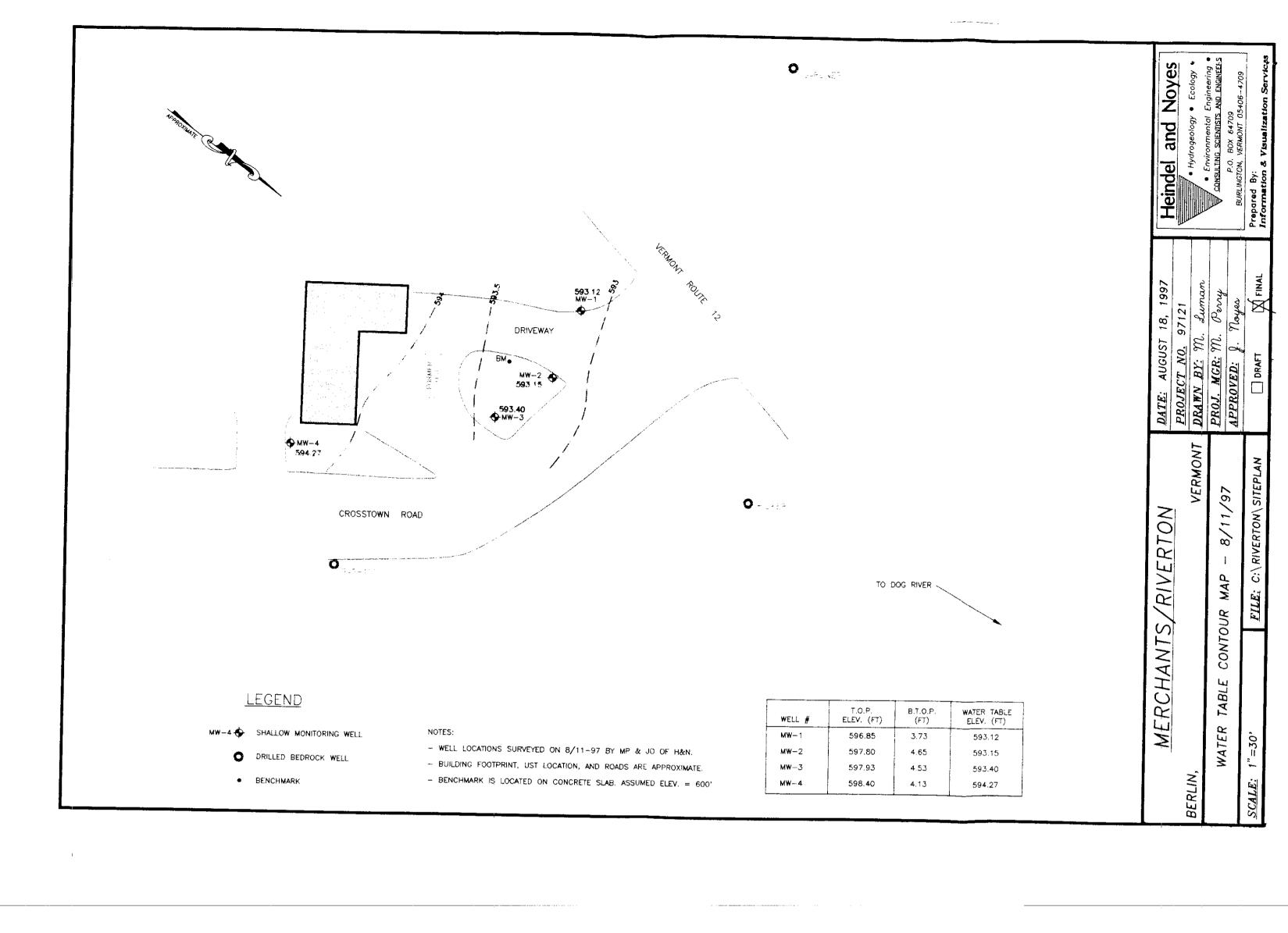
| Depth | Blows per 6" | Rec. | Soil Description | | Bag PID | Notes |
|-------|--------------|---|--|---|---------|-------|
| | | | | | | |
| 0-2 | | | Cobbly, Gravelly, Light Brown Fine to Coarse Sand Fill | 0 | | |
| 2-4 | 10/9/10/5 | 14" | Gravelly, Tan-Grey Fine to Coarse Sand Fill | 0 | 0 | |
| 4-5 | _ | Cobbly, Gravelly, Light Brown-Grey Very Fine to Coarse Sand | | 0 | | |
| 5-7 | 5/6/3/3 | 15" | Very Gravelly Tan Very Coarse Sand, Saturated. (upper 7") | 0 | 0 | |
| | | | to Olive Very Fine Sand, some Iron Stains. Saturated. (lower 7") | 0 | 0 | |
| 7-8.5 | | | Gravelly Grey Very Fine Sand | Ō | - | |

Bedrock at 8.5 ft. bgs. Well installed to rock.

-MW-4

| L | Depth Blows per 6" Rec. | | Rec. | Soil Description | PID | Bag PID | Notes |
|-----|-----------------------------|---------|------|---|-----|---------|-------|
| I | | | ļ | | | | |
| | 0-2 | | | Cobbly, Gravelly, Light Brown Fine to Coarse Sand Fill | 0 | | |
| | 2-4 | 4/5/7/5 | 11" | Gravelly, Olive-Grey Fine to Coarse Sand Fill, rust color | 0 | 0 | |
| Γ | 4-5 | | _ | Cobbly, Gravelly, Light Brown-Grey Very Fine to Coarse Sand | 0 | | |
| _1: | 5-7 | 6/8/6/5 | 5" | Brown Fine to Medium Sand, Saturated. | 0 | 0 | |
| 7-8 | | | ļ — | Brown-Grey Fine to Medium Sand, Saturated. | 0 | | |

Bedrock at 8 ft. bgs. Well installed to rock.



Riverton General Store Sampling Log

Date: 8/11/1997

| Well | Total Depth | Depth BTP | Volume (Gal) | Vol. Bailed (Gal) | Notes |
|---------------|-------------|-----------|--------------|-------------------|--|
| Τ | | | | | |
| √ 1W-1 | 6.17 | 3.37 | 0.46 | 0.75 | Silty at first, cleared. |
| JMW-2 | 5.87 | 4.65 | 0.20 | 0.50 | Silty, Bailed dry. |
| | 8.00 | 4.53 | 0.57 | 2.00 | Clear. |
| √IW-4 | 6.98 | 4.13 | 0.47 | 1.00 | Silty. |
| I | | | | | <u> </u> |
| Barberi | | *** | | | Ran hose 10 min; no sheen or odor in bucket. |
| | | | | | Ran tap 5 min; no sheen or odor. |
| Ricker | | | | | Ran tap 5 min; no sheen or odor. |

WELL NO. / TAG NO. DEPARTMENT USE ONLY State of Vermont 47<u>3</u> u.s.g.s. Dept. of Environmental Conservation E.C. ___ 103 South Main Street (ION) Field Location O Map area_ Waterbury, Vt. 05676 I his export must be completed and submitted to * _____*Elev._ Latitude_ the Depat Imani of Environmental Conservation WELL COMPLETION REPORT <u>..."</u> Торо._. 103 South Main Street (ION), Waterbury, VI Lonaltude_ . 3676 eq (aler thos 60 days after completion Scale: 62,500 □,25,000 □, 24,000 □ DEC 1 8 1990 Scale: 62,500 0,25 o' Iha wali WELL OWNER. OR WELL PURCHASER. Permonent Mailing Address LOCATION OF WELL, TOWN _15er/1' _ SUBDIVISION _ DATE WELL WAS COMPLETED ... PROPOSED USE OF WELL (D'Oomente C orner _ REASON FOR DRILLING WELL. [] New Supply, [] Replace Existing Supply, [] Deepen Existing Well, [] Test or Exploration, Provide Additional Supply. | Other ___ DRILLING EQUIPMENT: O Cable Tool, C Rotary with And, O Olnes ____ TYPE OF WELL, & Open Hole in Badrack, C Open End Casing, C Screened or Slotted, C Olher TOTAL DEPTH OF WELL:____ 8 CASING FINISH: Gabove ground, Finished, Above ground, Unfinished, Burled, In PII, Removed, Above used, Officer. CASING DETAILS: Total length 20 Is Length below L.S. 18 It Dia Co in Motorial STEEL WI 17 10/11 LINER OR INNER CASING DETAILS, Langth used_______ It Diameter_____ -11METHOD OF SEALING CASING TO BEDROCK DOLLES Shoe, D Great - Ivan Down Concreti-SCREEN DETAILS! MORE and Type YIELD TEST! Deciled, D Pumped, D Compressed Air, for -Measured by & Bucket, C Oreface pipe, Wer, C Meler Permanent Airline Installed _ feet below land surface . Date or Time measured _____ WATER ANALYSIS: Has the water been consisted ? | Yee @ Ra, If You, Where . 16 17 SPECIAL NOTES: _ 18. WELL LOG 19. SITE MAP Depit from Lond Surface Woter Formation Description Shares Feat Bearm 3 Surface 20. TESTED YIELD Gallery Per Minute JOHNSON DOING BUSINESS AS: 80 REPORT FILED BY: 1

DATE OF REPORT: 1

_ WELL DRILLERS LIC. NO. _



Laboratory Services

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel & Noyes

PROJECT NAME: Riverton Gen. Store

REPORT DATE: August 19, 1997 DATE SAMPLED: August 11, 1997 PROJECT CODE: HNRG1820

REF.#: 107,904 - 107,911

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D. Laboratory Director

741

enclosures



Laboratory Services

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333 FAX 879-7103

107,908

EPA METHOD 602--PURGEABLE AROMATICS

107,905

CLIENT: Heindel & Noyes

107,904

DATE RECEIVED: August 12, 1997

107,907

PROJECT NAME: Riverton Gen. Store

REPORT DATE: August 19, 1997

CLIENT PROJ. #: 97121

Ref. #:

Benzene

Chlorobenzene

Ethylbenzene

Toluene

Xylenes

MTBE

1,2-Dichlorobenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

PROJECT CODE: HNRG1820

107,906

<1

<1

<1

<1

<1

<1

1.7

<1

< 10

| KCI. #: | 107,704 | 107,505 | 107,500 | 10,,50, | |
|---------------------|--------------|-----------------|--------------|--------------|--------------|
| Site: | MW 1 | MW 2 | MW 3 | MW 4 | Barberi |
| Date Sampled: | 8/11/97 | 8/1 1/97 | 8/11/97 | 8/11/97 | 8/11/97 |
| Time Sampled: | 14:20 | 14:30 | 14:45 | 15:00 | 14:55 |
| Sampler: | А. Реггу | А. Репту | A. Perry | A. Perry | A. Perry |
| Date Analyzed: | 8/15/97 | 8/15/97 | 8/15/97 | 8/18/97 | 8/15/97 |
| UIP Count: | 0 | 0 | 0 | 3 | 0 |
| Dil. Factor (%): | 100 | 100 | 100 | 100 | 100 |
| Surr % Rec. (%): | 88 | 90 | 86 | 82 | 88 |
| Parameter | Conc. (ug/L) | Conc. (ug/L) | Conc. (ug/L) | Conc. (ug/L) | Conc. (ug/L) |
| Benzene | <1 | <1 | <1 | <1 | <1 |
| Chiorobenzene | <1 | <1 | <1 | <1 | <1 |
| 1,2-Dichlorobenzene | <1 | <1 | <1 | <1 | <1 |
| 1,3-Dichlorobenzene | <1 | <1 | <1 | <1 | <1 |
| 1,4-Dichlorobenzene | <1 | <1 | <1 | <1 | <1 |
| Ethylbenzene | <1 | <1 | <1 | <1 | <1 |
| Toluene | <1 | <1 | <1 | <1 | <1 |
| Xylenes | <1 | <1 | <1 | <1 | <1 |
| MTBE | <10 | <10 | <10 | <10 | <10 |
| | | | | | , |
| Ref. #: | 107,909 | 107,910 | 107,911 | | |
| Site: | Ricker | Gardner | Trip Blk | | |
| Date Sampled: | 8/11/97 | 8/11/97 | 8/11/97 | | |
| Time Sampled: | 15:10 | 14:00 | 11:30 | | |
| Sampler: | A. Perry | A. Perry | A. Perry | | |
| Date Analyzed: | 8/15/97 | 8/15/97 | 8/15/97 | | |
| UIP Count: | 0 | 0 | 0 | | Ì |
| Dil. Factor (%): | 100 | 100 | 100 | | |
| Surr % Rec. (%): | 89 | 89 | 82 | <u> </u> | |
| Parameter | Conc. (ug/L) | Conc. (ug/L) | Conc. (ug/L) | <u> </u> | |
| | | | | | |

<1

<1

<1

<1

<1

<1

<1

<1

<10

Note: UIP = Unidentified Peaks TBQ = Trace Below Quantitation NI = Not Indicated

<1

<1

<1

<1

<1

<1

<1

<1

<10

CHAIN-OF-CUSTODY RECORD

32 James Brown Drive Williston, Vermont 05495 (802) 879-4333

Project Name: Riverton General Store Billing Address: Reporting Address: HIN H+W # 97121 Rivertanut Site Location: Sampler Name: A weddie Perry Company: H+W Endyne Project Number: HNRG1920 Contact Name/Phone #: Awdd . Pery 658.0820 Phone #: 658 - 0820 Sample Containers Analysis Sample ŏ Rush R Field Results/Remarks Date/Time Sample Location Matrix Preservation Required Lab# М Type/Size and the second second 107904 'n2 11 WI 14:20 2 40 ml Cool 602 MWZ. 4:70 TIE MW3 1963 45 2 602 2 602 15:00 602 14:55 2 15:10 2 602 60214:00 Trip Blank 602 11:30 Date/fime Relinquished by: Signature Received by: Signature Date/Time Relinquished by: Signature Received by: Signature Requested Analyses New York State Project: Yes No 26 EPA 8270 B/N or Acid **EPA 624** Metals (Specify) 21 Total Solids ρH TKN 11 EPA 8010/8020 EPA 625 B/N or A 27 Coliform (Specify) 22 7 Total P 12 TSS Chloride EPA 8080 Pest/PCB EPA 418.1 COD 23 13 TDS 18 Ammonia N Total Diss. P 3 EPA 608 Pest/PCB BTEX 24 BOD. 14 Turbidity 19 Nitrite N EPA 8240 EPA 601/602 Conductivity Nitrate N' 5 10 Alkalinity TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides) 29 Other (Specify): 30